IN THE CLAIMS

1. (original) Process for manufacturing monolithic composite structures comprising precured subcomponents, or a combination of uncured resin preimpregnated fibre reinforced composite layers ("prepegs") and precured subcomponents, using special tooling to modulate the thermal expansion of the precured subcomponents, characterized by the steps of:

providing at least a first subcomponent (1) of composite material;

providing at least a second subcomponent (2) of composite material;

attaching an expansion compensating tooling (14, 18) to the second subcomponent, the surface of said tooling that makes contact with the second subcomponent being a rough surface (16,20) too promote enough friction to achieve a common expansion of both elements when subjected to a heating cycle;

placing the second subcomponent along with said tooling on the first subcomponent and bonding it to the latter by means of an uncured structural adhesive;

covering the assembly the first and second subcomponents and the tooling with a vacuum bag;

performing an autoclave cycle for curing the curable material contained in said assembly under high temperature and pressure conditions;

withdrawing said assembly from the curing autoclave; and

removing the expansion compensating tooling to obtain a monolithic composite structure consisting of both subcomponents bonded by the cured structural adhesive.

2. (original) Process according to claim 1, characterized in that subcomponets (1 and 2) are precured.

3. (currently amended) Process according to claim 1, characterized in that the first subcomponent (1) is precured and the second subcomponent (2) is uncured, the ~~later~~ latter being cured during the autoclave cycle.

4. (previously presented) Process according to claim 1, characterized in that the first subcomponent (1) is an aircraft skin and the second subcomponent is a stiffener for same.

5. (previously presented) Process according to claim 1, characterized in that the expansion compensating tooling consists of L-shaped metal beams (14) adapted to the geometry of the second subcomponent (2).

6. (previously presented) Process according to claim 1, characterized in the the expansion compensating tooling consists of L-shaped metal beams (18) adapted to the geometry of the second subcomponent (2).

7. (previously presented) Process according to claim 5, characterized in that the rough surface (15, 20) of the beams (14, 18) is a machined surface.

8. (previously presented) Process according to claim 5, characterized in that the rough surface (16, 20) of the beams (14, 18) is a surface having an attached friction enhancer selected fro sandpaper and the like.

9. (previously presented) Process according to claim 1, characterized in that the reinforcement (graphite, glass fiber, etc.) and matrix (thermoset of thermoplastic) are selected, without limitation, from those used in manufacturing composite materials.

10. (previously presented) Process according to claim 1, characterized in that the pressure and temperature used are selected, without limitations, within the ranges of pressures and temperatures recommended by the manufacturers of the raw materials.

11. (previously presented) Tooling for carrying out the process of claim 1, characterized by comprising metal beams (14, 18) having a rough surface (15, 20) adapted to be applied to the second subcomponent (2).

12. (original) Tooling according to claim 11, characterized in tha the beams (14) are L-shaped beams.

13. (original) tooling according to claim 11. characterized in that the beams (18) are L-shaped beams.

14. (previously presented) Tooling according to claim 11, characterized in that the rough surface (16, 20) of the beams (14, 18) is a machined surface.

15. (previously presented) Tooling according to claim 11, characterized in that the rough surface 915, 20) of the beams (14, 18) is a surface having an attached friction enhancer selected from sandpaper and the like.

16. (previously presented) Process according to claim 2, characterized in that the first subcomponent (1) is an aircraft skin and the second subcomponent is a stiffener fro same.

17. (previously presented) Process according to claim 3, characterized in that the first subcomponent (1) is an aircraft skin and the second subcomponent is a stiffener for same.

18. (previously presented) Process according to claim 2, characterized in that the expansion compensating tooling consists of L-shaped metal beams (14) adapted to the geometry of the second subcomponent (2).

19. (previously presented) Process according to claim 3, characterized in that the expansion compensating tooling consists of L-shaped metal beams (4) adapted to the geometry of the second subcomponent (2).

20. (previously presented) Process according to claim 4, characterized in that the expansion compensating tooling consists of L-shaped metal beams (14) adapted to the geometry of the second subcomponent.

21. (new) Tooling used in the manufacture of monolithic composite structures by means of assembling at least a first and a second precured subcomponents of composite material, or a first precured subcomponent and a second uncured subcomponent of composite material, the tooling being used to be attached to the second subcomponent to promote enough friction to achieve a common expansion of the tooling and the second subcomponent when subjected to a heating cycle, characterized by comprising metal beams (14, 18) having a rough surface (16, 20) adapted to be applied to the second subcomponent (2).

22. (new) Tooling according to claim , characterized in that the beams (14) are L-shaped beams.

23. (new) Tooling according to claim characterized in that the beams (18)9 are L-shaped beams.

24. (new) Tooling according to claim , characterized in that the rough surface (16, 20) of the beams (14, 18) is a machined surface.

25. (new) Tooling according to claim, characterized in that the rough surface (16, 20) of the beams (14, 18) is a surface having an attached friction enhance selected from sandpaper and the like.